For discussion

28 January 2000

Legislative Council Panel on Security

Replacement of the Criminal Intelligence Computer System and Enhanced Police Operational Nominal Index Computer System of Hong Kong Police Force

Purpose

This paper informs Members of a plan to replace the Criminal Intelligence Computer System (CICS) and the Enhanced Police Operational Nominal Index Computer System (EPONICS) currently used by the Police Force.

Background

2. Both CICS and EPONICS are operation support systems. CICS is used for assisting the Police in gathering and analysis of criminal intelligence. It was developed by two phases completed in April 1989 and August 1993 respectively. The system is mainly used by the Criminal Intelligence Bureau (CIB), Narcotics Bureau, Commercial Crime Bureau, and Organized Crime and Triad Bureau. Restricted access to the system has also been extended to Regional Intelligence Units and District Intelligence Squads since the end of 1999. The system enhances the Police's ability in detecting and preventing crime, in particular organized crime, and is essential to the Police's crime investigation activities.

3. EPONICS was installed in 1991 for the Criminal Records Bureau (CRB). It maintains the central repository of criminal records in Hong Kong and details of all persons who are signified by the Police as "Missing Persons" or "Wanted Persons". The system is vital to the daily arrest and prosecution process. For all cases arranged for proceedings, Police formations need to submit arrest documents to CRB for criminal record verification and to Identification Bureau (IB) for fingerprints verification. Conviction Summary Reports and Fingerprint Reports are required to be submitted to the Court before 9 a.m. on the first day of the proceedings. EPONICS also provides interfacing with the Police Enhanced Command and Control Computer System in support of Police "stop and search" operations on the streets by checking the "Wanted/Missing Persons" list recorded in the system.

4. At present, EPONICS provides batch interface with CICS, through which information of criminal records is copied to CICS in batches automatically on a regular basis. Interfaced to the Computer Aided Fingerprint Identification System (CAFIS) and the Photo Album Library (PAL), EPONICS also provides useful information for general crime investigations. In addition, as EPONICS is connected to the Modus Operandi Computer System, Police officers can make use of the conviction records held in the system to conduct research regarding offenders' modus operandi. EPONICS is widely used in the Police Force and is essential to its daily operation.

5. CICS and EPONICS are running on the same mainframe computer system used since 1989 when the first phase of CICS was installed. Albeit the enhancement in 1993 to accommodate the increase in processing power and capacity required by the second phase of CICS, the response time

for CICS is increasing with more data and users from Regional Intelligence Units and District Intelligence Squads. The maintenance cost is also relatively high. Above all, the CICS and EPONICS can no longer fully satisfy the current operational needs of the Police Force.

6. Criminal intelligence in CICS is provided by users from various bureaux and units of Crime Wing of Police Headquarters and from regional and district intelligence units. Under the current CICS, which is a text-based system and operates with a command line interface, users need to prepare the intelligence information in a specified format by filling in a form that is specially designed for such purpose and send it to CIB for input into the system. For intelligence collected from other sources including outside parties, CIB officers also need to re-input the data into the system. As it takes time for CIB officers to clarify the information with the sources once there is any deviation from the specified format and to vet the data after each input, intelligence held in the system may not be updated immediately. The effectiveness of the system may in turn be hindered. The rigid requirement of submitting information in a specified format may also discourage CICS users or other officers to provide intelligence to be input into the system.

7. In addition, without data encryption devices, the usage of CICS has been restricted to Headquarters units until the end of 1999. Even now, only limited intelligence is made available to Regional Intelligence Units and District Intelligence Squads which cannot make full use of the system.

8. Under the present EPONICS, arrest documents have to be passed from Police formations to CRB for criminal record verification in paper forms. Both these documents and Convictions Summary Reports produced by CRB afterwards need to be delivered manually. As explained

above, Conviction Summary Reports and Fingerprint Reports have to be passed to the Court before 9 a.m. everyday. A workflow bottleneck that has significant impact on the efficiency of CRB and IB is therefore resulted. In addition, without a direct on-line access to EPONICS, all Police formations have to pass their requests for any changes to the lists of "Missing or Wanted Persons" contained in the system to CRB by electronic mail messages. CRB officers will then need to re-input the data into the system.

9. Besides, both CICS and EPONICS are text-based and not user friendly. Users need to be familiar with the command codes and syntax. The systems are not able to accept and process Chinese data. Nor can they handle graphical data like maps which are very useful to Police operations.

The proposed systems

10. In view of the constraints of the two existing systems, the Police propose to replace them and develop a new CICS and EPONICS that can better meet their operational requirements. The new computer system will provide a stable and reliable environment to support the operation of CICS and EPONICS. It will have sufficient processing power and capacity to enable direct data updating by user formations and facilitate data sharing with other Police information systems. The proposed CICS and EPONICS will also serve additional functions.

11. The proposed CICS does not require data to be input with fixed command codes and syntax and is more user-friendly. Having direct access to the system, CICS users are no longer required to transmit the information on a particular form for input into the system. Instead, they can input the information themselves or scan the source documents into the system

directly to create or update the information contained in the system. Intelligence data analysis including pattern and trend can be conducted with the assistance of the enhanced features of the system. Intelligence information can also be produced in real time.

12. In addition, the new CICS can support bilingual processing and multi-media processing. Searches can be conducted in Chinese mixed with English. Information in form of sketches of criminal video and audio can also be input and processed by the system.

13. The proposed EPONICS will allow direct access for Police formations and the Court and hence enable the arrest process to be automated. With the new system, Police formations can transmit arrest documents including fingerprints electronically to Police information systems including EPONICS, CAFIS, PAL and so on for verification. Conviction Summary Reports can also be passed to the Court by electronic means.

14. Integrated with other information systems, the proposed system will also enable Police formations to update the lists of "Missing or Wanted Persons" directly. In addition, the new system can support bilingual processing and hence accept and process both English and Chinese data.

15. The proposed CICS and EPONICS will bring about the following benefits -

(a) information contained in the two systems can be updated without any unnecessary delay, which can definitely enhance their effectiveness in facilitating Police daily work and

operations;

(b) they can save resources currently incurred by CIB and CRB in collecting and inputting data into the two systems. CIB users can spend more time on analysis of criminal intelligence rather than data input and verifying. Dispatch services currently required in the arrest and prosecution process are no longer required;

(c) enabling direct input of data into the two systems will not only improve the efficiency but also the data accuracy because it obviates the need to re-input the same data into different computer systems;

(d) the enhanced search facilities and improvements in the structures of the database will shorten the processing time required to search the data for details of suspects, complainants and other entities;

(e) the improved intelligence analysis functions of the proposed systems will provide more sophisticated and advanced analytical tools to assist intelligence analysts and investigators. For example, users will be able to project crime patterns and have a quick overall view of sophisticated or complicated crimes; and

(f) annual savings of $7.89 million can be generated because of the lower maintenance cost of the new systems and staff savings in CIB and CRB.

Cost estimation

16. It is estimated that the non-recurrent cost of the proposed CICS and EPONICS will be $66.17 million, broken down as follows -

		$ million
(a)	Computer hardware	13.79
(b)	Computer software	9.69
(c)	System development and implementation services	28.09
(d)	Data conversion services	3.12
(e)	Project management (employment of contract staff)	5.86
(f)	Training for CICS and EPONICS users	0.73
(g)	Contingency	4.89
	Total:	**66.17**

Implementation plan

17. The Police plan to implement the proposed systems according to the following schedule -

		Target completion date
(a)	Specification preparation	September 2000
(b)	Procuring including tendering and awarding contract	June 2001
(c)	System development	April 2003
(d)	Installation of the new EPONICS	May 2004
(e)	Installation of the new CICS	November 2004

Other alternatives considered

18. Various alternative methods of achieving the increased functionality required for the CICS and EPONICS have been considered. It is however considered that a move towards an "open standard" platform, i.e. the proposal set out in this paper, will be the most cost-effective option. An enhancement of the existing systems is technically feasible but not preferred because of the high maintenance costs that will be incurred.

Security Bureau
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